

## ABSTRACT

A semiconductor device includes a capacitor having a lower electrode (102), a high-dielectric-constant or ferroelectric thin film (103), and an upper electrode (104) which are subsequently stacked. An impurity having an action of suppressing the catalytic activity of a metal or a conductive oxide constituting the electrode is added to the upper electrode (104). The addition of the impurity is effective to prevent inconveniences such as a reduction in capacitance, an insulation failure, and the peeling of the electrode due to hydrogen heat-treatment performed after formation of the upper electrode (104), and to improve the long-term reliability.